

is clear however, that pectins other than those having a degree of esterification of less than 30% may be utilized and pectins having a degree of amidation other than 25% may be utilized without deviating from the essential tenets of the invention.

I claim:

1. The process for making a polyvalent cation cross-linked pectin foam composition comprising:
  - a) dissolving in water either a low esterified calcium sensitive pectin having a degree of esterification (DE) of less than 30% and which pectin has a degree of amidation of less than 50%;
  - b) with continuous stirring, adding to the dissolved pectin a polyvalent cation; a plasticizing agent, the soluble effervescent compound; and
  - c) adding a surface active agent and with continuous stirring adding a suitable acid that will liberate a gas from the soluble effervescent compound, which gas will become entrapped in the pectin composition which has been insolubilized with the polyvalent cation.

2. The process of claim 1 wherein non-pectin polysaccharides are added to the pectin composition.

3. The process of Claim 2 wherein the polysaccharide is selected from the group consisting of carboxymethylcellulose, carboxymethyl ethyl cellulose, hyaluronic acid, carrageenan, alginic acid, sodium alginate, and gellan gum.

4. The process of claim 1 wherein the polyvalent cation is selected from a metal ion derived from salts selected from the group consisting of alkaline earth metal salts, alkali metal salts, transition metal salts, and mixtures thereof.

5. The process of claim 4 wherein the polyvalent cation is selected from the group consisting of calcium, barium, magnesium, zinc, iron, aluminum, copper, strontium, manganese, and mixtures thereof.

6. The process of claim 5 wherein the cation is selected from the group consisting of calcium, barium, copper, zinc, iron, aluminum, and mixtures thereof.

7. The process of claim 6 wherein the cation is calcium.

8. The process of claim 1, wherein the upper limit of the DE of the calcium sensitive pectin is 50%.

9. The process of claim 1, wherein the upper limit of the DE of the calcium sensitive pectin is 30%.

10. The process of claim 1, wherein the lower limit of the DE of the calcium sensitive pectin is 0%.

11. The process of claim 1 wherein the lower limit of the DE of the calcium sensitive pectin is 5%.

12. The process of claim 1 wherein the lower limit of the DE of the calcium sensitive pectin is 10%.

13. The process of claim 1 wherein the upper limit of the degree of amidation (DA) of the calcium sensitive pectin is 40%.

14. The process of claim 1 wherein the upper limit of the DA of the calcium sensitive pectin is 25%.

15. The process of claim 1 wherein the upper limit of the DA of the calcium sensitive pectin is 20%.

16. The process of claim 1 wherein the lower limit of the DA of the calcium sensitive pectin is 0%.

17. The process of claim 1 wherein the lower limit of the DA of the calcium sensitive pectin is 5%.

18. The process of claim 1 wherein the lower limit of the DA of the calcium sensitive pectin is 10%.

19. The process of claim 1, wherein the calcium

sensitive pectin is derived from citrus pectin.

20. The process of claim 19 wherein the citrus pectin is selected from the group consisting of lime, lemon, grapefruit, and orange.

21. The process for a wound dressing prepared in accord with claim 1 in which a medicament is present in the polyvalent cation cross-linked pectin foam composition.

22. The process for a wound dressing prepared in accord with claim 21 in which the medicament is collagen.

23. The process for a wound dressing prepared in accord with claim 21 in which the medicament is maltodextrin.

24. The process for a wound dressing prepared in accord with claim 21 in which the medicament is an antibiotic.

25. The process for a wound dressing prepared in accord with claim 21 in which the medicament is an antibacterial agent.

26. The process for a wound dressing prepared in accord with claim 21 in which the medicament is a hydrophilic substance.

27. The process for a wound dressing prepared in accord with claim 26 in which the hydrophilic substance is a sodium acrylic polymer.

28. The process for a wound dressing as set forth in claim 1 in which a backing is affixed to the polyvalent cation cross-linked pectin foam composition.

29. The process for a wound dressing of claim 21, in which the backing is an adhesive backing.

30. The process for a wound dressing of claim 21, in which the backing is a non-woven backing.

31. The process for a wound dressing prepared in accord with claim 28 in which a medicament is present in a polyvalent cation cross-linked pectin foam composition comprising a calcium sensitive low methoxy pectin with a degree of esterification (DE) of less than 50% and having a DA of less than 50%.

32. A polyvalent cation cross-linked pectin foam composition comprising a calcium sensitive low methoxy pectin with a degree of esterification (DE) of less than 50%.

33. The composition of claim 32 wherein non-pectin polysaccharides are added to the pectin composition.

34. The composition of claim 33 wherein the polysaccharide is selected from the group consisting of carboxymethylcellulose, carboxymethyl ethyl cellulose, hyaluronic acid, carrageenan, alginic acid, sodium alginate,

gellan gum, and mixtures thereof.

35. The composition of claim 32 wherein the polyvalent cation is selected from a metal ion derived from salts selected from the group consisting of alkaline earth metal salts, alkali metal salts, transition metal salts, and mixtures thereof.

36. The composition of claim 35 wherein the polyvalent cation is selected from the group consisting of calcium, barium, magnesium, zinc, iron, aluminum, copper, strontium, manganese, and mixtures thereof.

37. The composition of claim 36, wherein the cation is selected from the group consisting of calcium, barium, copper, zinc, iron, aluminum, and mixtures thereof.

38. The composition of claim 37, wherein the cation is calcium.

39. The composition of claim 32, wherein the upper limit of the DE of the calcium sensitive pectin is 50%.

40. The composition of claim 32, wherein the upper limit of the DE of the calcium sensitive pectin is 30%.

41. The composition of claim 32, wherein the lower limit of the DE of the calcium sensitive pectin is 0%.

42. The composition of claim 32 wherein the lower limit of the DE of the calcium sensitive pectin is 5%.

43. The composition of claim 32 wherein the lower limit of the DE of the calcium sensitive pectin is 10%.

44. The composition of claim 32 wherein the upper limit of the degree of amidation (DA) of the calcium sensitive pectin is 40%.

45. The composition of claim 32 wherein the upper limit of the DA of the calcium sensitive pectin is 25%.

46. The composition of claim 32 wherein the upper limit of the DA of the calcium sensitive pectin is 20%.

47. The composition of claim 32 wherein the lower limit of the DA of the calcium sensitive pectin is 0%.

48. The composition of claim 32 wherein the lower limit of the DA of the calcium sensitive pectin is 5%.

49. The composition of claim 32 wherein the lower limit of the DA of the calcium sensitive pectin is 10%.

50. The composition of claim 32, wherein the calcium sensitive pectin is derived from citrus pectin.

51. The composition of claim 50 wherein the citrus pectin is selected from the group consisting of lime, lemon, grapefruit, and orange.

52. The composition for a wound dressing as set forth in claim 32 in which a backing is affixed to the polyvalent cation cross-linked pectin foam composition.

53. The composition for a wound dressing as set forth in claim 52 wherein non-pectin polysaccharides are added to the pectin composition.

54. The composition for a wound dressing as set forth in claim 53 wherein the polysaccharide is selected from the group consisting of carboxymethylcellulose, carboxymethyl ethyl cellulose, hyaluronic acid, carrageenan, alginic acid, sodium alginate, gellan gum, and mixtures thereof.

55. The composition for a wound dressing as set forth in claim 52 wherein the polyvalent cation is selected from a metal ion derived from salts selected from the group consisting of alkaline earth metal salts, alkali metal salts, transition metal salts, and mixtures thereof.

56. The composition of claim 55 wherein the polyvalent cation is selected from the group consisting of calcium, barium, magnesium, zinc, iron, aluminum, copper, strontium, manganese, and mixtures thereof.

57. The composition of claim 56, wherein the cation is selected from the group consisting of calcium, barium, copper, zinc, iron, aluminum, and mixtures thereof.

58. The composition of claim 57, wherein the cation is calcium.



59. The composition for a wound dressing as set forth in claim 52, wherein the upper limit of the DE of the calcium sensitive pectin is 50%.

60. The composition for a wound dressing as set forth in claim 52, wherein the upper limit of the DE of the calcium sensitive pectin is 30%.

61. The composition for a wound dressing as set forth in claim 52, wherein the lower limit of the DE of the calcium sensitive pectin is 0%.

62. The composition for a wound dressing as set forth in claim 52, wherein the lower limit of the DE of the calcium sensitive pectin is 5%.

63. The composition for a wound dressing as set forth in claim 52, wherein the lower limit of the DE of the calcium sensitive pectin is 10%.

64. The composition for a wound dressing as set forth in claim 52, wherein the upper limit of the degree of amidation (DA) of the calcium sensitive pectin is 40%.

65. The composition for a wound dressing as set forth in claim 52, wherein the upper limit of the DA of the calcium sensitive pectin is 25%.

66. The composition for a wound dressing as set forth in claim 52, wherein the upper limit of the DA of the

calcium sensitive pectin is 20%.

67. The composition for a wound dressing as set forth in claim 52, wherein the lower limit of the DA of the calcium sensitive pectin is 0%.

68. The composition for a wound dressing as set forth in claim 52, wherein the lower limit of the DA of the calcium sensitive pectin is 5%.

69. The composition for a wound dressing as set forth in claim 52, wherein the lower limit of the DA of the calcium sensitive pectin is 10%.

70. The composition for a wound dressing as set forth in claim 52, wherein the calcium sensitive pectin is derived from citrus pectin.

71. The composition for a wound dressing prepared in accord with claim 32 in which a medicament is present in the polyvalent cation cross-linked pectin foam composition.

72. The composition for a wound dressing prepared in accord with claim 71 in which the medicament is collagen.

73. The composition for a wound dressing prepared in accord with claim 71 in which the medicament is maltodextrin.

74. The composition for a wound dressing prepared in accord with claim 71 in which the medicament is an

calcium sensitive pectin is 20%.

67. The composition for a wound dressing as set forth in claim 52, wherein the lower limit of the DA of the calcium sensitive pectin is 0%.

68. The composition for a wound dressing as set forth in claim 52, wherein the lower limit of the DA of the calcium sensitive pectin is 5%.

69. The composition for a wound dressing as set forth in claim 52, wherein the lower limit of the DA of the calcium sensitive pectin is 10%.

70. The composition for a wound dressing as set forth in claim 52, wherein the calcium sensitive pectin is derived from citrus pectin.

71. The composition for a wound dressing prepared in accord with claim 32 in which a medicament is present in the polyvalent cation cross-linked pectin foam composition.

72. The composition for a wound dressing prepared in accord with claim 71 in which the medicament is collagen.

73. The composition for a wound dressing prepared in accord with claim 71 in which the medicament is maltodextrin.

74. The composition for a wound dressing prepared in accord with claim 71 in which the medicament is an

antibiotic.

75. The composition for a wound dressing prepared in accord with claim 71 in which the medicament is an antibacterial agent.

76. The composition for a wound dressing prepared in accord with claim 71 in which the medicament is a hydrophilic substance.

77. The composition for a wound dressing prepared in accord with claim 76 in which the hydrophilic substance is a sodium acrylic polymer.

*added*  
A-1